

WHAT IS CLAIMED IS:

*Sub a1* → 1. An abnormality detecting apparatus for an automatic speed changer, comprising:

a speed change controlling means for controlling the automatic speed changer;

a learn controlling means for optimizing an rpm change at the time of speed change control by said speed change controlling means; and

an abnormality detection controlling means which judges whether a learned value of said learn controlling means falls within a range between an upper limit and a lower limit and if the learned value falls out of the range, and stores the condition as abnormal.

2. An abnormality detecting apparatus for an automatic speed changer, comprising:

a speed change controlling means for controlling the automatic speed changer;

a learn controlling means for optimizing an rpm change at the time of speed change control by said speed change controlling means;

a learned value change supervision controlling means for supervising a change in the learned value of said learn controlling means, counting up a learned value non-change counter if there is no change in the learned value, and storing the learned value as converged when the value of said learned value non-change counter

is not less than a predetermined value; and

an abnormality detection controlling means for storing that the condition as abnormal when the learned value is changed again after the judgement that the learned value change has been once converged by said learned value change supervision controlling means.

3. The abnormality detecting apparatus for an automatic speed changer according to claim 2, wherein said abnormality detection controlling means is adapted to set a threshold value after the convergence of the learn in a case where a predetermined threshold value after the convergence of the learn has not been set, and if the threshold value after the convergence of the learn has been set and to store that the condition is abnormal when the current learned value exceeds the set threshold value after the convergence of the learn.

4. The abnormality detecting apparatus for an automatic speed changer according to claim 2, wherein said abnormality detection controlling means is adapted to judge whether the change direction of the learned value of the current case is the same as or reverse to that of the previous case, to count up a learned value change direction reversing number counter in the latter case, and to store the condition as abnormal when the value of said learned value change

direction reversing number counter is not less than a predetermined value.

5. An abnormality detecting apparatus for an automatic speed changer, comprising:

a speed change controlling means for controlling the automatic speed changer;

a learn controlling means for optimizing an rpm change at the time of speed change control by said speed change controlling means; and

an abnormality detection controlling means for counting up a learn control execution number counter when the learn control is executed by said learn controlling means, counting up learned value change number counter if there is a change in the learned value and storing the condition as abnormal if the value of said learn control execution number counter is not less than a first predetermined value when a value obtained by subtracting the value of said learned value change number counter from the value of said learn control execution number counter is not greater than a second predetermined value.

6. An abnormality detecting apparatus for an automatic speed changer according to claim 1, further comprising a learned value record controlling means for counting up a learn execution number

counter when learn control is executed by said learn control means, judging whether there is a change in the learned value and judging a change direction when the learned value is changed, storing that the counted value of the learn execution number counter at this time and the fact that the learn direction is plus when the change direction is plus, and storing that the counted value of the learn execution number counter at this time and the fact that the learn direction is minus when the change direction is minus.

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